## Remarks/Arguments:

The Title of the invention was objected to for not being descriptive. The Title has been amended to recite "A DEVICE FOR PUPIL DETECTION BY MEASURING LUMINANCE ALONG CONCENTRIC CONTOURS," as suggested by the Examiner.

The Specification was objected to for an informality. The Specification has been appropriately amended. Withdraw of the objection is respectfully requested.

Claims 1, 3, 5, 9, 11, 13 and 17-18 are pending in the above-identified application. Claims 2, 4, 6-8, 10, 12 and 14-16 have been cancelled. New claims 17-18 have been added.

Claims 9-16 were objected to for being in improper dependent form. The objection to claims 10, 12 and 14-16 are rendered moot due to the cancellation of these claims. Claim 9 has been amended to be in independent form and to include the features of claim 1. Claims 11 and 13 depend from claim 9. Withdraw of the objection to claims 9, 11 and 13 is respectfully requested.

Claims 1 and 8 were objected to for informalities. The objection to claim 8 is rendered moot due to the cancellation of this claim. Claim 1 has been appropriately amended. Withdraw of the objection to claim 1 is respectfully requested.

Claims 1 and 9 were rejected on the ground of non-statutory obviousness-type double patenting over claims 3 and 6, respectively, of U.S. patent no. 7,347,547. Claims 1 and 9 have been amended to include features which are not disclosed or obvious in view of claims 3 and 6, respectively, of U.S. patent no. 7,347,547. Applicants respectfully request that this rejection be withdrawn.

Claims 1, 4-6, 8-9, 12-14 and 16 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Okano et al. The rejection of claims 4, 6, 8, 12, 14 and 16 is rendered moot due to the cancellation of these claims. Claim 1 is amended to recite features neither disclosed or suggested by the prior art, namely,

> ... **a partial frame memory** for inputting image data, the partial frame memory including a plurality of line memories of a first-in first-out (FIFO) type being connected in series;

> **a plurality of drawing lines** for extracting image data from a plurality of pixels on respective circumferences of a plurality of concentric integrating circles in the image data retained by the partial frame memory;
>
> **a plurality of adders**, each of the plurality of adders corresponding to each of the plurality of concentric integrating circles and for adding the image data extracted by the plurality of drawing lines with respect to the respective circumferences of the plurality of concentric integrating circles... (Emphasis added).

Basis for these amendments may be found, for example, in the originally filed application at page 14, line 12 to page 15, line 6; page 15, lines 7-13; page 16, lines 7-12 and Fig. 5. No new matter has been added.

Pupil detection device 200 of Applicants' exemplary embodiment includes image data extraction unit 220, contour integrating unit 230 and pupil radius detection unit 250. (Page 14, lines 3-5). Image data extraction unit 220 includes **partial frame memory** 210, and drawing lines $L_i$ for outputting the image data. (Page 15, lines 1-2). **Partial frame memory 210 includes line memories 215** of a first-in first-out (FIFO) type connected in series. (Page 15, lines 5-6). Contour integrating unit 230 is provided with **independent adders** $230_1$-$230_n$ with respect to respective integrating circles $C_1$-$C_n$. Then, m image data located on the circumference of each integrating circle $C_i$ are added, and the respective added results are outputted to pupil radius detection unit 250 as the integrated value $I_i$. (Page 16, lines 7-12).

Okano et al. does not disclose "... a partial frame memory ... a plurality of drawing lines ..." and "... a plurality of adders," as recited in Applicants' claim 1. Rather, Okano et al. only discloses "... the ellipse selection unit 14 and the pixel addition unit 13 provide a plurality of differences with respect to sums of pixels of the circumferences of the plurality of ellipses 40." Because Okano et al. does not disclose these features, Okano et al. does not extract the plurality of image data <u>simultaneously</u>."

Applicants' claimed features of "... a partial frame memory ... a plurality of drawing lines ..." and "... a plurality of adders..." are advantageous over the prior art because the image data extraction unit may extract the plurality of image data <u>simultaneously</u>." (Page 15, lines 3-4).

Thus, Applicants respectfully submit that claim 1 is allowable over the art of record. Claim 5 depends from claim 1. Accordingly, claim 5 is likewise allowable over the art of record.

Claim 9, while not identical to claim 1, includes features similar to those set forth above with regard to claim 1. Thus, claim 9 is also allowable over the art of record for at least reasons similar to those set forth above with regard to claim 1. Claim 13 depends from claim 9. Accordingly, claim 13 is likewise allowable over the art of record.

Claims 2-3, 7, 10-11 and 15 were rejected under 35 U.S.C. § 103 (a) as being obvious in view of the combination of Okano et al. and Cleveland. The rejection of claims 2, 7, 10 and 15 is rendered moot due to the cancellation of these claims. Cleveland does not make up for the deficiencies of Okano et al. with respect to claims 1 and 9. Accordingly, claims 3 and 11 are allowable because they depend from allowable claims 1 and 9, respectively.

New claims 17-18 have been added. Basis for these amendments may be found, for example, in the originally filed application at page 14, line 12 to page 15, line 6; page 15, lines 7-13; page 16, lines 7-12 and Fig. 5. No new matter has been added.

In view of the foregoing amendments and remarks, Applicants submit that this Application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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